



INTRODUCTION

All non-constant variables have an associated color palette that defines the mapping from variable values to colors. These palettes can be easily edited to customize the mapping. Color palettes can also be saved to disk and restored during a subsequent session.

BASIC OPERATION

Color Palettes have four basic components:

Levels	A palette can have up to 21 Levels at which the variable value is specified. Note that the number of Levels also controls the number of contour loops created for contour parts that depend on the variable.
Scale	The palette scale controls how variable values are assigned to Levels between the minimum and maximum. Choices are linear (the default), quadratic (x^2), or logarithmic (\log_{10}).
Type	The palette type controls how color is interpolated across part elements and from Level to Level: <div><div><i>Continuous:</i> Color is linearly interpolated across elements.</div><div><i>Banded:</i> Geometry is colored in discrete bands of uniform color where the band boundaries are permitted to cross element faces (as controlled by the nodal variable values).</div><div><i>Constant:</i> Each element is colored by the average of the colors at its nodes.</div></div>
Limit Fringes	Limit Fringes controls how color is set for nodes outside the range of variable values specified by the palette: <div><div><i>No:</i> Nodes above the range are colored by the maximum color; those below by the minimum color.</div><div><i>By Model Color:</i> Nodes outside the range are colored by the underlying part color.</div><div><i>By Invisible:</i> Elements whose nodes are outside the range are not displayed at all.</div></div>

The default color palette created for each variable has five Levels (with the minimum and maximum set to the range of the variable at the time step selected when the variable was activated), a linear scale, and is of type Continuous. The color ramp is a standard spectrum with the five Levels set to (from min to max) blue, cyan, green, yellow, and red.

EnSight can display multiple color legends in the Graphics Window:

1. **Select the desired variable in the Main Variables list.**
2. **Click the Show Legend button directly underneath the Main Variables list.**
3. **If the desired variable is a vector, select the Magnitude, X, Y, or Z component.**

To remove a legend:

1. **Be sure no variables are selected in the Main Variables list. You can deselect an entry by pressing the Control key as you click on the item.**
2. **Click the Show Legend button directly underneath the Main Variables list.**

Color legends have a number of display attributes including size, position, and how/where the variable labels are formatted. See [How To Create Color Legends](#) for details.

How To ...

Edit Color Palettes



The **Feature Detail Editor for Variables** provides access to all aspects of variables. The following shows the components of the dialog:

1. Double-click the Color icon in the Feature Icon bar to open the Feature Detail Editor for Variables.



Use the File menu to save and restore palettes.

Available variable list. A * indicates that the variable is currently active. Selected variable is highlighted.

Buttons to activate and deactivate selected variables.

Histogram of the distribution of the selected variable. Provides control for:

Histogram Scale Adjustment

Minimum Palette Value Slider

Overall min/max for the selected variable

Calculate overall min/max from Beg to End time steps (and update histogram)

Color palette – click on a label to set the current Edit Level

Feature Detail Editor (Variables)

FileEditViewHelp

Available Variable	Type	Result
temperature	() Gvn Scalar	
velocity	(*) Gvn Vector	
Coordinates	(*) Gvn Vector	

Activate

Activate All

Deactivate

Variable Summary and Palette

MagnitudeXYZ

Min=0.0000e+00Max=1.0034e+00

Over Time Step BegEnd

TypeContinuous

ScaleLinear

Limit FringesNo

of Levels5

Edit Level1

Interpolate To Level

Value0.0000e+00

R0.00G0.00B1.00

Mix...

Variable type (constant, scalar, vector).

Whether given (Gvn) or computed (Cmp).

Select component of vector variables

Maximum Palette Value Slider

Palette type (Continuous, Banded, Constant)

Palette scale (Linear, Quadratic, Logarithmic)

Limit Fringes toggle

Number of Levels in the palette

Current Edit Level

Automatic Level interpolation toggle

Variable value assigned to current Edit Level

RGB color assigned to current Edit Level



Changing Color Palettes

To change a color palette:

1. Double-click the **Color** icon in the **Feature Icon bar** to open the **Feature Detail Editor for Variables** (or double-click the desired variable in the **Main Variables list**).



By default, the changes you make to a color palette have an immediate effect. For large models, the response rate for interactive editing (e.g. changing the minimum by moving the Minimum Palette Value slider in the histogram) can be too slow. To disable this behavior, select **Edit > Immediate Modification** (in the **Feature Detail Editor**) to toggle this setting off. To apply your changes, click the **Apply Changes** button at the bottom of the dialog.

There are several ways to edit a color map.

1. Select the desired variable. Click **Activate** if it has not been activated.

To change the minimum or maximum (and have the intermediate Levels adjust accordingly):

2. Grab the **Minimum (or Maximum) Palette Value slider** (the white vertical bars) and adjust to the desired location.

To change the number of Levels:

2. Enter the desired value (between 2 and 21) in the **# of Levels** field and press return.

Note that this will also change the number of contour loops for any current contour parts that depend on the selected variable.

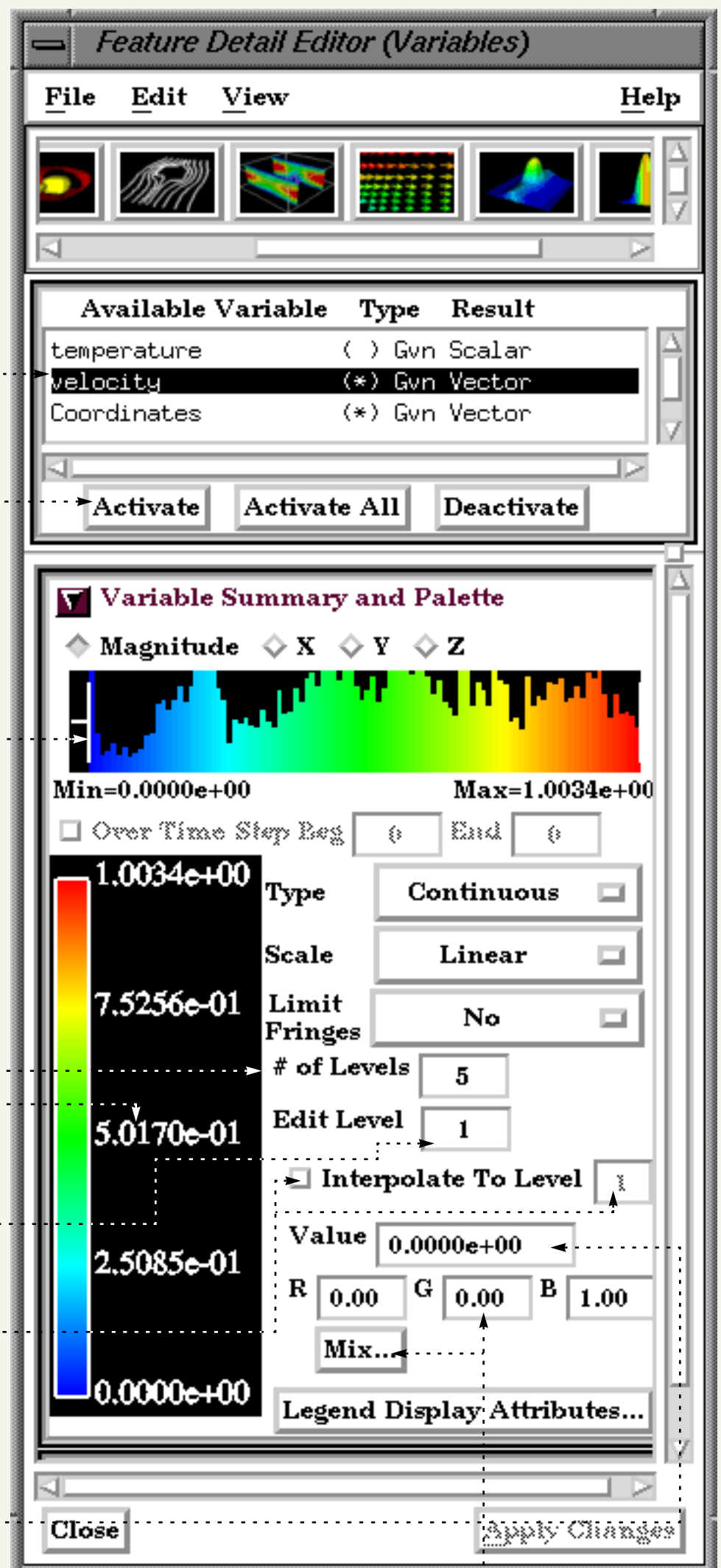
To edit individual Levels:

2. Select the desired Level: either click on the **Level label**, OR enter the **Level number** into the **Edit Level** field and press return.

3. If you wish to automatically interpolate the variable values at preceding (lower) Levels, toggle on **Interpolate to Level** and enter the desired Level to interpolate to.

4. To change the variable value associated with the Level, enter the new value in the **Value** field and press return.

5. To change the color associated with the Level, enter the new color in the **RGB** fields OR click **Mix...** to open a **Color Selector**.





OTHER NOTES

When a variable is first activated, the minimum/maximum settings for the associated palette are set to the minimum/maximum values of the variable. Although this is the standard way of initializing color maps, it can result in under utilization of the palette since typically only one node has the minimum or maximum value. You can override this default behavior by using the option “-range10” when you start EnSight. This will shrink the palette towards the median value by 10% off the top and the bottom. In previous releases of EnSight this was the default behavior.

SEE ALSO

[How To Create Color Legends](#), [How To Create New Variables](#), [How To Create Contours](#)

User Manual: [Variable Summary & Palette](#)